

Lower Nooksack River Floodplain Integrated Planning (FLIP)

FLIP Team Meeting

October 29, 2019

10 am to 3:00 pm

Central County Shop Training Room

Participants:

Alan Chapman, Albert DeBoer, Andy Wisner, Bo Westford, Carol MacIlroy, Charles Ifft, Chris Elder, Chris Konrad, Dale Blok, Dan Goger, David Timmer, David Radabaugh, Deb Johnson, Dennis Clark, Doug Channel, Duane Holden, Frank Corey, Fred Likkel, Gabe Ng, Gary Goodall, Janet Curran, Jason Buehler, Jason Hall, Jay Krienitz, Jeff DeJong, Jerry Juergens, Jill Jacoby, Joel Ingram, Joel VandeHoef, John Thompson, Kara Kuhlman, Karin Boyd, Kristin Hayman, Lonni Cummings, Mark Ewbank, Michael Maudlin, Ned Currence, Paul Knippel, Paula Harris, Rich Appel, Rollin Harper, Ron Bronsema, Scott Hulse, Seth Ballhorn, Steve Banham, Ted Perkins, Todd Bennett, Travis Bouma, Treva Coe, Trevor Delgado.

Meeting facilitation: David Roberts (Kulshan Services)

Meeting Purpose

- To review the overall planning process and current status of work
- To develop a shared basin-scale understanding of the physical processes affecting flooding and fish habitat in the lower river
- To develop a shared basin-scale understanding of fish habitat conditions and needs
- To review available land use information and related assessment of problems identified to date
- To review past flood strategies for the lower river as a starting point for developing integrated reach strategies
- To develop an understanding of integrated planning work to be done at the river reach scale

Note: All documents and presentations from the meeting can be found on the County's website:

<http://www.whatcomcounty.us/2662/FLIP-Meetings>

Overview of FLIP Planning Process (Paula Harris, Whatcom County)

Paula began the meeting with an overview of the FLIP planning process, the work of the FLIP Steering Committee, the field studies and mapping that have been underway, and the plans for gathering and integrating input from five reach teams.

Geomorphic view of reach-scale challenges and opportunities (Karin Boyd, AGI)

Karen provided an overview of the river from a geomorphic standpoint looking at ongoing and future considerations for river management. Key factors are:

- Landowner interest
- Landownership
- Funding
- Everson overflow
- Downstream impacts (positive and negative)
- Habitat needs
- Climate change

For each of the four mainstem reaches Karen provided some overarching geomorphic goals. She listed challenges and opportunities for each of the reaches. Karen also provided two diagrams illustrating the intensity of levee maintenance for each of the lower Nooksack levees showing the relationship of corridor width to maintenance intensity and cost.

Hydraulic changes at Everson – what might it mean? (Todd Bennett, NHC)

Todd talked about the challenges with the hydraulic modeling of lower reach 4 due to changes in the bed resulting from sediment accumulation. Uncertainties in the channel geometry and inflows make it challenging to calibrate to observed high water marks in the Everson-Sumas overflow corridor and match the hydrograph at Ferndale.

He discussed the method NHC is using to calibrate the model. There are still some uncertainties including changes in channel configuration and determination of the appropriate rating curve to use, but additional refinements are showing promise.

Habitat assessment and capacity analysis (Jason Hall, Cramer Fish Sciences)

Jason discussed the objectives, approach and methods used by his team to survey the habitat in the Lower Nooksack and determine the salmonid rearing capacity. Jason also provided background on the life cycle of salmonids, escapement numbers, egg to fry survival in the upper forks, how habitat in the lower river contributes to recovery and how habitat in the floodplain has changed over time. The assessment objectives were to support salmon recovery and integrated floodplain planning by providing information on current habitat conditions, historical context, and salmon and habitat restoration needs. The approach described current habitat conditions in the mainstem, floodplain, and estuary and provided an understanding of the seasonality of habitat use and flows.

Jason concluded that edge habitat is very important. Hydromodified bank edges are most prevalent and causing the greatest impact in reaches 1, 2 and 3 where capacity is reduced by about 3.2 times the capacity of the reaches if the banks were natural. He also pointed out there is a need to increase side channels and braids to create habitat complexity and productivity. The lack of large woody debris limits Chinook density particularly in the lower three reaches of the river. Floodplain habitat has been significantly modified since 1880 resulting in a loss of 75% of wetland and pond habitat for refuge and rearing. Jason also showed how changes to the estuary are reducing complexity and affecting habitat.

Jason noted that subyearling Chinook rearing capacity is less than 50% of historical levels and that most of the reductions are in reaches 1, 2 and 3. He provided a table that shows a list of recommended strategies and which should be considered for each reach of the river to improve habitat conditions.

Floodplain and Community Characteristics and Concerns (Mark Ewbank, Herrera; Trevor Delgado, Nooksack Tribe; Fred Likkel, Whatcom Family Farmers)

Mark provided an overview of statistics on population, land uses, and important public infrastructure in the floodplain of the lower Nooksack. Mark also shared information gathered from visits with cities and tribes related to river and floodplain management including concerns at specific locations along the river. Primary safety and infrastructure concerns are in residential areas of the Nooksack Tribe, Sumas, Everson, Lynden, Ferndale and the Lummi reservation. Watershed wide concerns of both the Nooksack Tribe and Lummi Nation were highlighted.

Trevor Delgado shared some interesting information on the Nooksack Tribe's effort to preserve history and prevent the loss of cultural resources. Fred Likkel shared perspectives and concerns of farmers. Drainage is one of the greatest concerns, but other issues include impacts of shorter growing seasons, flooding during growing season, erosion of land (channel migration), and water rights.

Concerns shared by all the entities will be considered as the plan is developed and projects designed.

Reach Strategies from Past Plans – A Place to Start (Paula Harris, Whatcom County)

Paula provided some historical background on planning processes from the past including the 1999 Comprehensive Flood Hazard Management Plan (CFHMP), the 2005 Salmon Recovery Plan, and the 2016 System-wide Improvement Framework (SWIF). In addition, she outlined funding goals and opportunities associated with Floodplains by Design (FbD) grant program. Paula outlined the primary objectives from the CFHMP and goals established during the SWIF process for FbD funding.

From there she provided context regarding expectations of these earlier plans for each reach of the lower Nooksack. She also provided some background related to flood related needs in the upper forks of the river. Many of the earlier recommendations are still appropriate today.

Reach Team Launch (Mark Ewbank, Herrera)

Mark provided a look forward at the next steps of the process. Now that most of the system studies are complete, the next phase will include reach team work to:

- Integrate needs/problems;
- Integrate reach strategies;
- Develop SMART objectives;
- Identify opportunities;
- Develop project ideas;
- Evaluate alternatives; and
- Establish reach priorities.

With the help of the Steering Committee, Herrera has developed “heat mapping” tools for Reach discussions to shed light on specific issues and areas of the floodplain that need attention. The plan is to engage interested parties in Reach 2 in the first phase this winter. That effort will serve as a pilot of sorts for the planning elsewhere in the Lower Nooksack. More information will be shared in the near future about the process moving forward.